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ON THE EVOLUTION OF THE ART OF WORKING IN STONE. A PRELIMINARY PAPER BY J. D. McGUIRE.

A Reply by Charles H. Read.

In the *American Anthropologist* for July, 1893, appeared an essay with the above title. The writer, with whom I am personally unacquainted, was good enough to send me a separate copy of it. I read it with some interest, for the efforts of an earnest worker, who attempts, by novel methods, to solve a difficult problem, cannot fail to be of interest to any one who has given attention to the problem itself.

The question of palæolithic man in America has, moreover, given rise to such fierce discussion that it seemed necessary to point out the danger that lies in the use of improper or irrelevant evidence. Such methods can only serve to mislead enquirers and to delay the solution of the puzzle. The paper now in question is so persistent in its pursuit of will-o'-the-wisps that a better text could scarcely be found.

The problem Mr. McGuire has set himself to resolve, stripped of all redundant matter, is this: whether the so-called palæolithic remains of Europe are necessarily older than the so-called neolithic? Incidentally he implies that " from a purely archæological standpoint, the paleoliths of Europe and the similar American implements are in all particulars, identical, and are productions of man existing under like conditions." What he understands by an archæological standpoint we shall see later, but first I would deal with the main contention.

Noscitur a socii is an axiom of archæology. When an object is found in the earth, and is dumb as to its own history, we naturally and justly turn to its companions to help us. This is good so far as it goes, and in an isolated case we may go wrong. But when we multiply the single case with fifty or a hundred, finding in all the same association of objects, and the circumstances attested by persons of known observation and probity, what before was probability is turned into as great certainty as humanity can attain over the past. This, in a few words, is the foundation upon which paleolithic man in Europe now stands. This foundation might be broadened by much geological addition, but the argument would be none the more forcible. To put it more directly, certain flint implements are found in a stratum of a known age, so that this particular stratum comes to be recognized by all observers as their habitat. They are found elsewhere, truly, but when so found they usually bear indications of the vicissitudes they have undergone since leaving their home. Such flint implements, further, are found associated with the remains of animals which are universally admitted to belong to a given geological epoch. Here again they are so associated with such persistency, noted by such widely separated and independent observers, that the possibility of universal error is as wildly improbable as that of universal conspiracy. Such being the class of evidence upon which the antiquity of palæolithic man is founded, it is obvious that any attack, to be effectual, must be made on the premises. If it could be shown either that the palæolithic implements were not found in their undisturbed bed, or that the animal remains near them had no connection with them, then any conclusions based upon such association would necessarily fall to the ground.

Mr. McGuire takes, however, an entirely different stand. His theories are based upon his own experience as an amateur maker of stone implements, and his experiments have led him to the belief that it is *far easier* to make a polished stone implement than a chipped one, and that *therefore* polished *flint* implements are at least as old as those that are only chipped and not polished!

Has Mr. McGuire ever seen a specimen of Kafir or Polynesian carpentry? In the British Museum is a Kafir copy of a common European chair, made in the usual fashion as to shape, with slender spars for a back, a solid seat and spidery legs. This is cut from one solid block of wood, surely a far more difficult task than to make the chair by joining in the usual manner. Applying Mr. McGuire's argument to this case, and it does not seem an unfair application, for both the

Kafir and the Polynesian cuts everything from the solid, where does it land us? Are we to think that they began with joining, without doubt the easier method, and finally came to the more difficult, the cutting from the solid? Surely not; the natural explanation is the best, simply that the easier method of work did not occur to them.

From another point of view Mr. McGuire's experience is somewhat at variance with that of others. Palæolithic implements in Europe, and I would prefer to speak of Europe only at present, are made of very few materials, chiefly flint and quartzite. Mr. McGuire knows and admits this fact, but seems to assert that it is easier to form an implement by battering than by chipping. If the implement is to be of flint, I greatly doubt it, but if of certain stones of difficult or uncertain fracture, it may well be the case.[1] It seems inconceivable that such a statement could be calmly made, seeing how entirely contrary it is not only to the experience of all who have tried the experiment, with the single exception of Mr. McGuire, but also in direct opposition to all the evidence on the subject. Can Mr. McGuire point out a single instance of a polished implement being found on an admitted palæolithic site? He gives no such instance, and as it would form the strongest point in his whole argument if he could quote one, we may presume that he does not. That being so, surely it is fighting the air to bring a long array of his own experiments to prove that palæolithic man *ought* to have found out what he considers the easiest way of making his tools.

It may be well to make the point at issue quite clear by stating that there is no question of the polishing or grinding of an implement caused *by use.* Such an instance, probably more than one, of the chipped edge of a tool of palæolithic age being worn or ground by applying it to its destined work, has occurred. But it has never been urged that the effect thus produced was part of the original design.

Before leaving this branch of the enquiry I would fain quote Mr. McGuire's peroration. He says that palaeolithic man

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[1] I say "seems to assert," for though the point at issue is the making of palaeolithic implements, yet Mr. McGuire uses the indefinite term "stone" when he should say "flint."

"had knives with which he could cut various articles and needles with which to sew; he knew the art of making and burning pottery; could and did make fire; he drilled holes of large and small size in bones, antlers, shells and fossils, and was familiar with the art of engraving at a period contemporaneous with the Mousterian implement and a quaternary fauna. With such evidence can it be argued that man was ignorant of a knowledge of the process by which stone was battered and ground in to shape and yet familiar with the more complicated art of chipping?"

On the other side I would put the man of the eighteenth century. He was familiar with the learning of two thousand years preceding his own time; he knew and practised the art of printing; he was an accomplished chemist and astronomer; he was an admirable artist in painting, sculpture and music; was a student of the forces of nature; traversed the whole world for the improvement of his mind or the bettering of his fortunes; he was expert in the beautifying of his every day surroundings of furniture and the accessories of a luxurious home. With such evidences should it not be argued with far greater force that he must have known that under the lid of his boiling tea-kettle, a utensil of daily use, lay a force that would carry him over land or sea five times more swiftly than the swiftest horse? Yet it is remarkable that he never thought of the application of the power of steam.

One word about the "purely archæological standpoint." This seems, in Mr. McGuire's view, to resolve itself into "the character and size of the chips detached appearing identical as do the so-called implements when laid one beside the other;" for, on the same page, he says, "Taking the type of the implement as a criterion of antiquity, America, Europe and Asia stand on the same footing." This, however, is the most dangerous criterion that could be taken. Even in Europe where the material used and the character of the sites are nearly alike, the type of implement alone is by no means a certain indication of age. I have seen hundreds of undoubted neolithic implements of far ruder work than an ordinary implement from the drift. And there is every reason why it should be so. The material used is the same, and we have no ground for supposing that the process of manufacture was different. When, however, the types of one Continent are used as a criterion, by superficial resemblance alone, for determining the date of similar implements from another and distant Continent, the conclusions arrived at can obviously be of no value whatever.

I have long thought that a prominence totally undeserved has been given to the rule of thumb distribution that "chipped — polished = palaeolithic, and chipped + polished = neolithic." Its only virtue is its convenience and that it is easy to remember. But to exalt it to the dignity of a determinative factor is, I think, a great mistake, and I feel sure that many ardent collectors of stone implements cling to this accidental distinction as their sheet-anchor for data. The fact that palæolithic man overlooked the polishing of his implements is a mere accident, a subsidiary and incidental peculiarity, and possesses no right whatever to the importance it has attained. It has not the least value in determining whether an implement is of one or the other period. The converse of the proposition does not, of course, hold good in our present state of knowledge. If a polished implement of flint be found, it can safely be declared non-palæolithic, for the reason that up to now no implement with a designedly ground surface has been found on a palæolithic site. It would be of the greatest service in this particular if some fortunate searcher could light upon a hoard of polished palæolithic flint tools. Then it is possible that the true determination of palæolithic as opposed to neolithic would obtain proper recognition; that it does not rest upon the slender evidence of "chipping only," but upon a far more solid foundation, to wit, the evidence of the bed in which it lies.

To the observer in Europe the whole question of what is known as palæolithic man in America seems to be in a chaotic state. There appear to be many reasons for this. One principal one is, without doubt, the unfortunate reliance upon a particular type of implement as a distinguishing character of palæolithic deposits. Granted that such a type has a determinative value in Europe, by what process of reasoning can it be argued that man, living thousands of miles away, has produced the same peculiar variety, simply because he lived with a similar group of extinct animals? Another reason, perhaps equally potent, is that only a very limited number of the students of early man in America have made any lengthened study on the spot of the conditions under which these remains are found in Europe. If the conditions are to be similar in America, then this would appear to be a necessity. If they are unlike, as is very possible, yet there must be sundry points of resemblance, and it is surely of value to proceed to the study of the unknown by familiarizing the mind with the date of a known and accepted condition. To sum up in a few words—let intelligent observers, trained to use their eyes, knowing what constitutes evidence, and capable of recording it, let such men work over the possible sites of the American Continent, and the result of their labors will, without any doubt, be of the greatest value to science, whether palæolithic man be found or not. But it is of the first importance that the explorers be trained men. The investigations of men without the necessary knowledge not only causes the results to be of little present value, but their work destroys the very evidence upon which alone true knowledge can be founded.